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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR         | ATTORNEY DOCKET NO.      | CONFIRMATION NO. |
|---|-------------|------------------------------|--------------------------|------------------|
| 10/616,336  | 07/09/2003  | Petrus Carolus Maria Frissen | NL000765 A               | 1380             |
| 7590  | 06/30/2004  |                              |                          |                  |
| Corporate Patent Counsel<br>Philips Intellectual Property & Standards<br>P.O. Box 3001<br>Briarcliff Manor, NY 10510-8001 |             |                              | EXAMINER<br>PHAM, LEDA T |                  |
|   |             |                              | ART UNIT<br>2834         | PAPER NUMBER     |

DATE MAILED: 06/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/616,336

Applicant(s)

FRISSEN ET AL.

Examiner

Leda T. Pham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 July 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Preliminary Amendment***

1. Preliminary Amendment filed on 7/18/03 has been entered and made of record in the file.  
Claims 1 – 11 are presented for examination.

### ***Claim Objections***

2. Claims 1, 8 – 9 are objected to because of the following informalities: lines 21 – 22, claim 1, “the permanent magnets”, and “the region” lack of antecedent basis. Claim 8, “one of said two other arrays” is unclear; it should be change to – said first or second linear array--.  
Claim 9, “the vertical distance” lack of antecedent basis.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:  

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 2, 5 - 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 2, “the sensors sensitive to magnetic fields are present in that part of said two parts in which the coil systems are situated” is vague because where is “that part of said two parts”? In claim 5, “identical square shape with sides” is unclear; does applicant mean that identical square shape and equal or same sides? It is the same subject mater with “oblong shape with sides”. In claim 10, “the ends of said side” is unclear, the distances of the ends of said side does not show in the figure.

Claims 6 – 9 are rejected to since dependent to claim 5.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1 – 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Markle (U.S. Patent No. 6,072,251) in view of Floresta et al. (U.S. Patent No. 6,239,516 B1).

Markle discloses in figures 5,8 and 12 a displacement device with a first part (figure 8) and a second part (figure 12) which are displaceable relative to one another in at least an X-direction and a Y-direction perpendicular thereto, wherein the first part comprises a carrier (798) which extends substantially parallel to the X-direction and the Y-direction and on which a system of magnets is fastened in a pattern of rows (801, 803) extending parallel to the X-direction and columns (800, 802) extending parallel to the Y-direction, wherein an equal distance is present each time between the rows and between the columns, wherein in each row (801, 803) and in each column (800, 802) magnets of a first kind (N) with a magnetization direction perpendicular to the carrier and directed to the second part and magnets of a second kind (Z) with a magnetization direction perpendicular to the carrier and directed away from the second part are positioned in alternation, and wherein a magnet of a third kind (H) with a magnetization direction directed from a magnet of the second kind (Z) to the magnet of the first kind (N) is arranged between the magnets of the first (N) and the second kind (Z), while the second part is provided with a system of electric coils (figure 5) with at least one electric coil of

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a first kind (500), with current conductors situated in a magnetic field of the system of magnets and enclosing an angle of substantially  $45^\circ$  with the X-direction, and with at least one electric coil of a second kind (502), also with current conductors situated in the magnetic field of the system of magnets and enclosing an angle of substantially  $45^\circ$  with the X-direction but directed perpendicular to the current conductors of the first electric coil (500). Markle, however, did not disclose the displacement device is provided with a number of sensors sensitive to magnetic fields, which sensors supply a signal, which is dependent on the local mutual positions of the permanent magnets of the first part relative to the electric coils of the second part in the region where these two parts overlap.

Floresta teaches a displacement device disclosing in figure 2 having a number of sensors (19) sensitive to magnetic fields, which sensors supply a signal, which is dependent on the local mutual positions of the permanent magnets (12) to the electric coils (slider 14, coil 10) in the region where these two parts overlap for a purpose of detecting the field magnetic.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the Markle's displacement device by adding the sensors into the electric coils to sense the magnetic fields as taught by Floresta for the purpose of detect the field magnetic. Doing so would limitless the ability to create complex windings for improved performance without winding machines.

Referring to claim 2, Floresta discloses in figure 2 the sensors sensitive to magnetic fields are present in the part of said two parts in which the coil systems are situated.

Referring to claim 3, Floresta discloses a displacement device that the sensors sensitive to magnetic fields comprise Hall sensors (column 4 lines 34 - 36).

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7. Claims 4, 10 – 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Markle and Floresta as applied to claim 1 above, and further in view of Takei (U.S. Patent No. 5,701,042).

Referring to claim 4, the combination of Markle and Floresta references teaches the claimed invention, except for the added limitation of the sensors sensitive to magnetic fields comprise one of several linear arrays of individual Hall sensors, which are situated at regular distances to one another.

Takei discloses in figure 5 that the sensors sensitive to magnetic fields comprise one of several linear arrays of individual Hall sensors (63) which are situated at regular distances to one another for emitting a signal corresponding to the lines of magnetic force emitted by each magnetic pole possessed by field magnets when said field magnet approaches.

Thus, it would have been obvious to one having skill in the art at the time the invention was made to modify the sensors as taught by Takei. Doing so would emit a corresponding signal of the relative positions of the magnet.

Referring to claim 10, Takei teaches a displacement device which the electric coils (42) are of an approximately rectangular shape and as a result have mutually opposed parallel straight sides, the electric coils of each coil system are arranged such that their corresponding sides are positioned parallel to one another, and each linear array (63) is arranged in a position parallel to a side of the immediately adjacent electric coil and at equal distances to the ends of said side (figure 5).

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Referring to claim 11, Takei teaches a displacement device having the individual Hall sensors (63) of each array are connected to an input of a summation amplifier via respective individual differential amplifiers (figure 13).

### ***Double Patenting***

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claims 1, 3 – 9 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 - 6 of U.S. Patent No. 6,661,127 (patent '127). Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant application recites "the sensors sensitive to magnetic fields comprise Hall sensors", and "the sensors sensitive to magnetic fields comprise one or several linear arrays of individual Hall sensors which are situated at regular distances to one another" in claims 3 and 4, while those features also disclose in claim 1 of the patent '127. Furthermore, "the magnets of the first (N) and the second kind (Z) are of an identical square shape with sides (13), and the magnets of the third kind (H) have an oblong shape with sides (12, 14), the longer sides (12) of a magnet of the third kind (H) adjoining the sides (13) of a magnet of the first (N) and the second kind (Z) and being equally long as the sides (13) of the magnets of the first and

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second kinds, while the ratio of the length of the shorter side (14) of a magnet of the third kind (H) to the length of the longer side (12) lies between 0.25 and 0.59, and the distance between the centers of the outermost Hall sensors of a linear array is equal to  $2n \times p$ , with  $n$  is ( 1, 2, 3, ...), and  $p$  is the pole pitch of poles of equal orientation of the permanent magnets in a diagonal direction in the XY-plane at an angle of  $-45^\circ$  or  $+45^\circ$  to the X-direction and the Y-direction” in claim 5 of the instant application is in claim 1 and 2 of the patent ‘127. Claims 6 - 9 of the instant application are corresponding to claims 3 – 6 of the patent ‘127.

***Allowable Subject Matter***

10. Claims 5 - 9 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter: the record of prior art does not show the ratio of the length of the shorter side of the magnet of the third kind (H) to the length of the longer side thereof lies between 0.25 and 0.59.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leda T. Pham whose telephone number is (571) 272-2032. The examiner can normally be reached on M-F (8:30-6:00) first Friday Off.

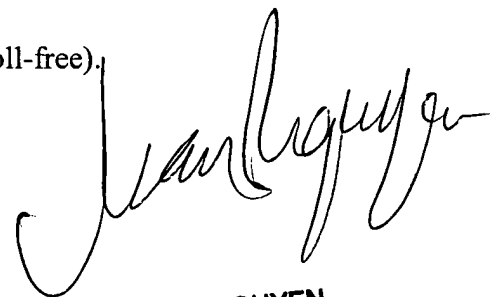
If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Darren Schuberg can be reached on (571) 272-2044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Leda T. Pham  
Examiner  
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A handwritten signature in black ink, appearing to read 'Tran Nguyen', is written over the printed name and title of the Primary Examiner.

**TRAN NGUYEN**  
**PRIMARY EXAMINER**

LTP  
June 22, 2004